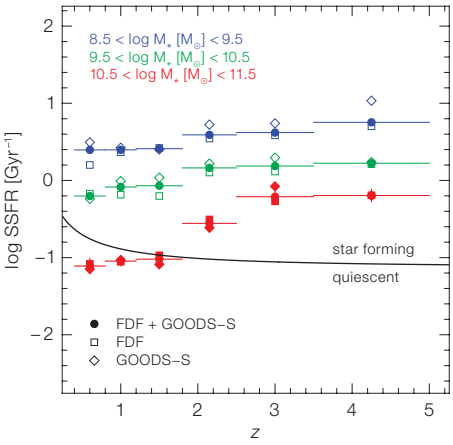
Figure 6: Average specific star-formation rates for galaxies with stellar masses of log $M_*/M_\odot \in$ [8.5, 9.5] (blue), [9.5, 10.5] (green) and [10.5, 11.5] (red) and star-formation rates larger than 1 $M_\odot$ yr^{-1} as a function of *z* for FDF (open squares), GOODS-S (open diamonds) and the combined sample (filled circles). The error bar represents the error of the mean. The solid line indicates the doubling line of Figure 5 which can be used to discriminate quiescent and star-forming galaxies.



Such samples allow us to view the assembly of galaxies in principle for the first time. Also, theoretical models of galaxy formation can use these data to compare wide ranges of observables to their predictions.

Future surveys will provide yet better constraints on the current set of observables and will add further observables for each galaxy, until a complete picture of the star-formation and merging history of galaxies can be obtained.

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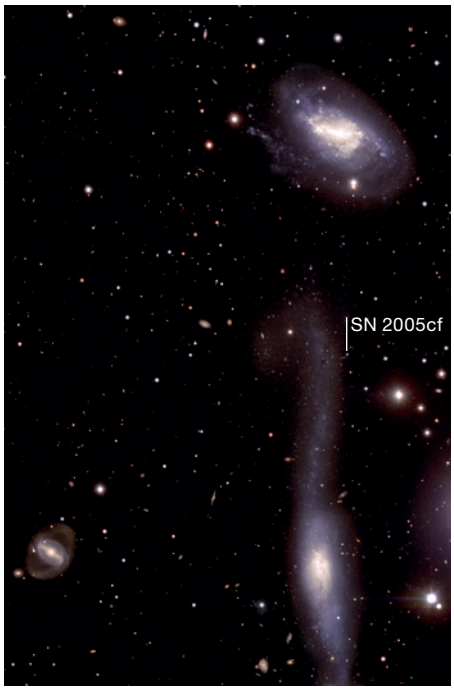
A Supernova in an Interacting Pair of Galaxies

MCG-01-39-003 (bottom right) is a peculiar spiral galaxy, apparently interacting with its neighbour, the spiral galaxy NGC 5917 (upper right). Both galaxies are located at similar distances, about 87 million light years away, towards the constellation of Libra.

Last year, a star exploded in the vicinity of the hook. The supernova, noted SN 2005cf as it was the 84th found that year, was discovered by astronomers Pugh and Li with the robotic KAIT telescope on 28 May. It appeared to be projected on top of a bridge of matter connecting MCG-01-39-003 with NGC 5917. Further analysis with the Whipple Observatory 1.5-m Telescope showed this supernova to be of the Ia type and that the material was ejected with velocities up to 15 000 km/s. Immediately after the discovery, the European Supernova Collaboration (ESC), led by Wolfgang Hillebrandt (MPA-Garching, Germany) started an extensive observing campaign on this object, using a large number of telescopes around the world. The ESC includes ten institutions across Europe (Stockholm, MPA, Barcelona, CNRS, ESO, ICSTM, ING, IoA, Padua, Oxford).

There have been several indications about the fact that galaxy encounters and/or galaxy activity phenomena may produce enhanced star formation. As a consequence, the number of supernovae in this kind of system is expected to be larger with respect to isolated galaxies. Normally, this scenario should favour mainly the explosion of young, massive stars. Nevertheless, recent studies have shown that such phenomena could increase the number of stars that eventually explode as Type Ia supernovae.

The supernova was followed by the ESC team during its whole evolution, from about ten days before the object reached its peak luminosity until more than a year after the explosion. As the SN becomes fainter and fainter, larger and larger telescopes are needed. One year after the explosion, the object is indeed about 700 times fainter than at maximum.



The supernova was observed with the VLT equipped with FORS1 by ESO astronomer Ferdinando Patat, who is also member of the team led by Massimo Turatto (INAF-Padua, Italy), and at a later stage by the Paranal Science Team, with the aim of studying the very late phases of the supernova. These late stages are very important to probe the inner parts of the ejected material, in order to better understand the explosion mechanism and the elements produced during the explosion. The deep FORS1 images reveal a beautiful tidal structure in the form of a hook, with a wealth of details that probably include regions of star formation triggered by the close encounter between the two galaxies.

(Based on ESO Press Photo 22/06)

ESO PR Photo 22/06 is a composite image based on data acquired with the FORS1 multi-mode instrument in April and May 2006 for the European Supernova Collaboration. The observations were made in four different filters (*B*, *V*, *R*, and *I*) that were combined to make a colour image. The field of view covers 5.6 × 8.3 arcmin. North is up and East is to the left. The observations were done by Ferdinando Patat and the Paranal Science team (ESO), and the final processing was done by Olivia Blanchemain, Henri Boffin and Hans Hermann Heyer (ESO).